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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,936	12/18/2001	Joel Wayne Davenport	US018102	6760

7590 02/24/2004

Corporate Patent Counsel
Philips Electronics North America Corporation
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EXAMINER

CRUZ, LOURDES C

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,936	DAVENPORT ET AL.	
	Examiner	Art Unit	
	Lourdes Cruz	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 13-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-7 and 13-17 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koepf (US5138436) in view of Cadence (Allegro Designer/ Allegro Expert).

Koepf discloses a BGA package (see cover figure) having a plurality of external connection contacts (on 28/on 15) comprising:

A first device 18 having a plurality of electrical connections connected to a first set of the external electrical connection contacts; and a second device (any other shown adjacent device/unlabeled) having a plurality of electrical connections to a second set of the external contacts (see correspondence); wherein the first and second sets of the external electrical connections are segregated in two sections which are electrically isolated from each other (see col. 7, 50-60 and col. 8, 45+).

Koepf also discloses a BGA package wherein:

- The two sections are separated by spacing gaps (see recess 16) with a predetermined standard

- A plurality of layers, including a signal layer 30, power layer 24, ground layer 14, and a bottom layer 13; wherein each of the layers includes to sets of electrical connections (see there is at least two devices) that are segregated in two sections which are electrically isolated from each other, and the two sets of electrical connections are respectively connected to the first and second devices
- IC devices
- Regarding claims 7 and 17 see that the prior art teaches all the structure above. However, see that the claims recite Intended Use limitations that do not patentably distinguish the claimed device from that disclosed by the prior art.

See that Koepf is silent about:

- Separating electrically isolated sections by a first distance based upon an expected Voltage difference
- Physical separation between conductors based upon voltage between conductors

However, see that the Cadence reference (See highlighted sections on included reference) teaches voltage dependant spacing for BGA package construction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Cadence to those of Koepf in order to avoid breakdown

between traces, and because arbitrary spacing of voltage lines would result in an inoperable device.

Response to Arguments

Applicant's arguments with respect to the previous Office Action have been considered but are moot in view of the new grounds of rejection above.

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elle Cruz whose telephone number is (571) 272-1928. The examiner can normally be reached on M-F 10-6:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammand Cuneo can be reached on (571) 272-1957. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Elle Cruz
February 20, 2004

Lourdes Cruz
Examiner
Art Unit 2827

Jan M. Zarnke
David A. Zarnke
Primary Examiner
AU 2827
2/20/04